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NEW EPHEMERIDAE FROM ILLINOIS\*

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Through the courtesy of Dr. S. Forbes I have recently had the opportunity of working over the Ephemeroidea material contained in the collection of the Illinois State Natural History Survey at Urbana, Ill. In this connection I offer the following descriptions of species which appear to be undescribed, as well as a note on a Mexican species, the identity of which has been doubtful.

**Campsurus decoloratus** Hagen

This species was described (1861, Syn. Neur. N. Am., 43) from alcoholic material, presumably females, from Matamoros, Mexico. It has been included in our North American list by Banks on the strength of a doubtful identification by Eaton (Mon. p. 41). Amongst the material before me are two males from Brownsville, Texas, a town just across the Rio Grande from Matamoros, which show the black forelegs mentioned by Hagen and agree fairly satisfactorily with the description in other details. In view of the similarity of localities, I am holding for the present the name *decoloratus* Hag., to these specimens and figure the male genitalia.

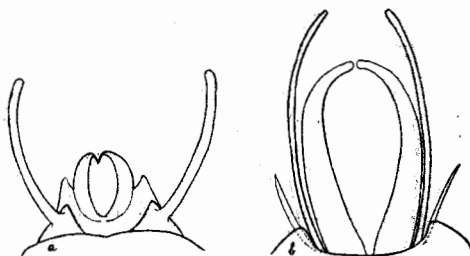


Fig. 1.—a. Male genitalia of *Campsurus decoloratus* Hagen;  
b. Male genitalia of *Campsurus primus* McD.

**Campsurus primus** sp. nov.

*Male.* Pale yellowish, thorax somewhat deeper; anterior legs with femora yellow, tibiae and tarsi blackish, antennae and setae whitish. Wings hyaline with pale veining, costa not shaded with darker color. Genitalia very distinct from *decoloratus*, forceps with thin process projecting from their bases, in length about one third of forceps, penes long, broad and somewhat incurved at tip, only slightly shorter than forceps.

Length of body 10 mm., of forewing 12 mm.

*Holotype*—♂, Grand Tower, Ill., Aug. 14, 1898, (C. Hart) No. 24529; in Collection Natural History Survey Ill., Urbana, Ill., U.S.A.

*Paratypes*—9♂, same data, five of them in Canadian National Collection, through the kindness of Dr. S. Forbes.

**Baetis harti** sp. nov.

*Male.* Turbinate eyes large for size of insect, oval, black-brown (dried); head blackish, thorax deep black-brown; abdomen with segments 2-6 hyaline whitish with black dots along spiracular area, posterior segments chocolate brown,

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slightly paler ventrally. Legs pale yellowish; setae whitish. Wings hyaline, intercalaries on primaries short but distinct, those between veins 2 and 3 obsolescent. Secondaries narrow, long, with prominent costal projection and two longitudinal veins, rather similar to Dodds' figure of *quilleri* (Trans. Am. Ent. Soc., XLIX, Pl. IX, fig. 36).

Length of body  $2\frac{1}{2}$  mm.; of forewing 3 mm.

*Holotype*—♂, Urbana, Ill., July 11, 1898, (C. Hart), No. 24491; in Coll. Natural History Survey of Illinois, Urbana, Ill.

*Paratypes*—3 ♂, same data. Two of these in Canadian National Collection, Ottawa.

This is one of the smallest known species. I had at first identified it as *pygmaea* Hagen from the St. Lawrence region, but believe that this latter name for the present had better be held to an equally small species in the *flavistriga* group of which we have a series collected by Mr. C. H. Curran, at Hemmingford, Que. *Harti* belongs in the *propinquus* group and apart from size can be identified by the narrow secondaries with prominent costal projection.

#### **Baetis pallidula** sp. nov.

*Male*. Turbinate eyes very large (larger than in *intercalaris*) circular, deep reddish (dried); thorax pale olivaceous-ochreous with the posterior dorsal prominence of mesothorax creamy; abdomen with segments 2-6 very pale, hyaline yellowish with pale-centered black spiracular dots. Segments 7-10 dorsally light brown, ventrally deep creamy. Legs pale yellowish, setae whitish. Wings hyaline, secondaries broad, much as in Dodds' figure of *moffatti* (Trans. Am. Ent. Soc. XLIX, Pl. IX, fig. 38). Length of body 4 mm.; of forewing 5 mm.

*Holotype*—♂, Stony Creek, Muncie, Ill., May 24, 1914, in Coll. Nat. History Survey of Illinois, Urbana, Ill.

*Paratypes*—2 ♂, same data, one in the Canadian National Collection.

The pale thorax readily separates *pallidula* from the described species.

#### **Pseudocloeon veteris** sp. nov.

*Male*. Turbinate eyes large, circular, much larger than in *dubium* Wlsh.; thorax deep brown, shaded with paler on posterior dorsal prominences and lateral sutures; abdomen with segments 2-6 semihyaline yellowish with subdorsal rows of minute reddish dots, situated one on each side of the median line in the central portion of segment; posterior segments light chocolate brown, paler ventrally. On the pale abdominal segments there is a medio-ventral row of brown spots, situated one on posterior margin of each segment. Legs yellowish, wings hyaline.

*Female*. Thorax light ochreous, abdomen dorsally light chocolate brown; maculation as in male. Length of body  $4\frac{1}{2}$  mm., of forewing 6 mm.

*Holotype*—♂, Urbana, Ill., May 13, 1898, (C. Hart), No. 24400; in the Collection Natural History Survey of Illinois.

*Allotype*—♀, same data, in same collection.

*Paratype*—♂, same data, in Canadian National Collection, Ottawa.

The specimens are rather old and the colours in fresh material may be brighter but the species should be readily recognized by its size, large eyes and the abdominal maculation. It is apparently related to *punctiventris* McD.

**Heptagenia (Ecdyonurus?) integer** sp. nov.

*Male.* Head and thorax whitish clay-color. Abdomen hyaline on first seven segments, opaque whitish on posterior segments; posterior edge of segments very narrowly edged with black dorsally; a lateral row of black dots, one on posterior portion of each segment at end of black segmental edging, is typically present. Setae pale with narrow brown intersegmental rings; legs whitish, femora ringed centrally and tipped with ruddy. Wings hyaline with fine longitudinal veins which are rather pale in color; crossveins thicker and distinctly dark, comparatively few in number, especially in the basal area, only two or three on costa before the bulla, where there is a group of four or five; below this the cross veins of the radial sector and median areas form an irregular line across the wing, preceded by long elongate cells; a ruddy shade apically between veins 2 and 3, scarcely extending to costa. Length of body 5 mm.; of forewings 6 mm.

*Holotype*—♂, Alton, Ill., Aug. 27, 1913; in Collection Natural History Survey, Illinois, Urbana, Ill.

*Paratypes*—3 ♂, same data; 1 ♂, Urbana, Ill., June 14, 1887 (C. Hart). Two of these are in the Canadian National Collection, Ottawa.

The pale color, small size and dark crossveining of primaries distinguish the species from *simplex* Walsh as described. The forelegs of all the specimens before me are unfortunately lacking but the characteristic L-shaped penes lead one to believe that the species will probably fall into *Ecdyonurus* with first tarsal joint of male forelegs about half the length of the second.

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